Research Competencies in Counseling: A Delphi Study

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Abstract:

Research quality has become the focus of a nationwide discussion, one from which the counseling field is not exempt. One hindrance to improving counseling research is the lack of guidelines for research competence. The purpose of this study was to develop an initial list of research competencies for the counseling field using the Delphi method. An expert panel of counseling researchers reached consensus on 159 research competencies. Suggestions for implementation and future research are discussed.

Keywords: Research | Competencies | Research training

Article:

Research is imperative for advancing a profession. For counseling, research should have an impact on the clinical treatment and the supervision counselors provide. However, the degree to which research can effectively inform practice is limited by the quality of the research conducted (Sink & Mvududu, 2010; Wampold, 2006). Research quality was called into question at the national level across various social and behavioral sciences (e.g., Walker, Golds, Jones, Bueschel, & Hutchings, 2008), including the counseling profession (Black & Helm, 2010; Frick, Lambert, Lawson, Olguin, & Wester, 2009). In fact, the same concerns that were cited 2 decades ago regarding counseling research quality (Fong & Malone, 1994) still exist today (Wester, Borders, Boul, & Horton, 2013), indicating that these aspects of research either are not being taught, are not being understood, or are not being applied well. The common and consistent problems include sampling errors, inappropriate statistical analyses, a lack of research questions, a lack of statistical power, and a lack of validity information for instrumentation (Fong & Malone, 1994; Wester et al., 2013). Although the reason for the ongoing concerns is unclear, the consistent weaknesses found in empirical submissions and publications call into question individuals' training and competence in research. The development of research competencies in

the counseling field to assist in increasing and enhancing the quality of research in counseling is a pertinent step forward.

With regard to clinical practice, the ACA Code of Ethics (American Counseling Association [ACA], 2014a) stresses the need for counselors to engage in and consider research in their practice. Specifically, the ACA Code of Ethics indicates that "counselors have a responsibility to the public to engage in counseling practices that are based on rigorous research methodologies" (Section C) and that "counselors [should] continually monitor their effectiveness as professionals and take steps to improve when necessary" (Standard C.2.d.). Similarly, the Commission on Rehabilitation Counselor Certification (2010) indicated that rehabilitation counselors need to devise treatment "plans that offer a reasonable promise of success" (Standard A.1.b.), which can be determined by reviewing research findings. However, Mobley and Wester (2007) reported that 45% of practicing counselors who responded to their survey said that they did not collect data as a method of monitoring their effectiveness with clients. In addition, 30% said that they did not read current research or apply the findings in their clinical work. These results are compounded by the possibility that some of the research studies that other respondents read may be flawed or may lack rigor (Wester et al., 2013) and, thus, may not provide accurate suggestions for clinical practice. The failure to use or apply research in practice may also be related to the research–practice gap (e.g., Howard, 1985; Murray, 2009). This gap exists for many reasons, with some professionals suggesting that practitioners find research irrelevant, they have difficulty in understanding the results and applying them to clinical practice, and they have limited access to research when they are no longer affiliated with a university (e.g., Howard, 1985; Proctor, 2004; Sexton, Whiston, Bleuer, & Walz, 1997). However, another reason may be a lack of research training, particularly with regard to understanding research articles (for practitioners) or conducting research and adequately reporting the results (for researchers).

With respect to research training, the Council for Accreditation of Counseling and Related Educational Programs (CACREP; 2009) Standards include statements of knowledge and skill outcomes for master's and doctoral students. Although these statements are a good starting point, they provide only broad directions for designing research training experiences. Such broad statements seem to be the norm across professions, because reviewers of accreditation standards, including those for counselor education, concluded that existing research training guidelines tend to be general, vague, and unclear (Thombs et al., 2004; Walker et al., 2008). Golde (n.d.) indicated that a problem facing most disciplines is the lack of guidelines for standardizing what students receive in training, which is one way to ensure strong scholarly inquiry and research practice. More direction is needed to address concerns about the quality of research and training in the counseling profession. Borden and McIlvried (2010) stressed that competencies provide this needed direction. Although competencies exist for other critical areas in counseling (e.g., advocacy, multicultural counseling; see ACA, 2014b), research competencies are not stated.

Competency refers to "a professional [being] qualified, capable, and able to understand and do certain things in an appropriate and effective manner" (Rodolfa et al., 2005, p. 348). Specific competencies are typically broken into the elements of knowledge, skills, and attitudes (McIlvried & Bent, as cited in Rodolfa et al., 2005). A few disciplines recently developed research competency guidelines that are specific to their fields. For example, Richardson (2006) created a "crucial elements" framework that listed the outcomes of learning the practice of research in the field of education. She listed seven crucial elements: have substantive knowledge of the field, think theoretically and critically, frame fruitful research problems, see research as socially situated, design research (join researchable problems to appropriate methods of inquiry),

collect and analyze data, and communicate with various audiences about research. The American Academy of Health Behavior (AAHB; 2005) adapted Richardson's framework in creating a vision for doctoral research training in its field, including a new emphasis on "partnerships with the community" (p. 552), or communitybased participatory research. More recently, Peterson, Peterson, Abrams, Stricker, and Ducheny (2010) listed three domains of research competency for psychology: critical evaluation of research, conducting and using research in applied settings, and ethics and professional competence. Each of these lists includes topics that seem relevant to counseling and counselor education; however, they lack a focus that is specific to the work of counseling practitioners.

Given the consistent concerns with the quality of research indicated throughout the literature by professionals, the knowledge that at least one third of counselors do not use current research to inform their practice, and the lack of a common set of research competencies for programs to use in training strong scholars, the development of a set of research competencies is important to the counseling field. In addition, instead of simply adapting research competencies developed for other disciplines, these competencies should arise out of the belief system of counseling professionals. Thus, the purpose of this study was to begin to create an empirically derived set of research competencies specific to the counseling field. The specific research question in this study was, What do a group of experts in counseling research deem are the required research competencies for counselors to be able to conduct quality research?

Method

The Delphi method is a systematic process through which experts reach consensus (Dawson & Brucker, 2001; FletcherJohnston, Marshall, & Straatman, 2011). This method is typically used when there is a paucity of research in a particular area, such as the lack of research competencies in the field of counseling. The Delphi method involves selecting a panel of experts, who remain anonymous to one another, to provide their opinions and ratings through multiple structured steps (Fletcher-Johnston et al., 2011).

Panel Selection

The selection of a representative panel of experts is critical to the strength and validity of the Delphi method (Clayton, 1997). Panel members should be considered successful and knowledgeable in the area of study in order to make a valid contribution (Powell, 2003). In addition, a heterogeneous group of individuals with differing opinions, skills, and perspectives on the problem is needed to generate more comprehensive and robust results (Murphy et al., 1998). For the current study, panelists were selected on the basis of indicators of their degree of expert knowledge in the area of research, including their products (i.e., recent empirical publications and publications that were focused on research methodology, analysis, or process; authors of statistics, methodology, or assessment books) and service positions (i.e., current/past editors, associate editors, editorial board members, or statistical consultants for counseling journals; instructors of research methodology or analysis courses). To ensure expertise in the area of research, we invited panelists only if they met more than one criteria (i.e., an empirical publication alone would not indicate expertise). Given the focus on research competencies for the counseling field, a doctoral degree in counselor education was required. Per Murphy et al.'s (1998) recommendations regarding heterogeneity of the panel, we attempted to include experts

who had conducted research using qualitative and quantitative methodologies; who had knowledge of data analysis, methodology, and instrument development and assessment; and who varied in their concentration, including foci on clinical mental health, school, college, and couples and family concentrations.

With these criteria in mind, we identified 10 individuals for the expert panel. We contacted these individuals and asked if they (a) would be willing to participate in the study and (b) would nominate other individuals in the field of counseling whom they considered to be competent researchers. They all agreed to participate and nominated a total of 16 additional individuals (some of the same individuals were nominated multiple times but were counted only once). Of the 16 people, two nominees were already part of the initial panel and seven did not meet the criteria (i.e., had a degree in another field, such as psychology or human development and family studies, and were not currently practicing in the field of counseling; had not published empirical articles in the past few years), leaving seven individuals who met the criteria. Of the 17 individuals contacted (10 initial panelists and seven nominees), one person never responded. The remaining 16 individuals agreed to participate; however, prior to the first round, one withdrew (resulting in N = 15). Each panelist had a minimum of one peer-reviewed publication in research methodology, research process (e.g., how to conduct or how to publish research), or assessment; six research methodology or assessment books had been published among the panelists; and, collectively, panelists held or had held 11 editor positions for ACA and ACA division journals, held or had held six associate editor or statistical consultant positions for ACA and ACA division journals, and served or had served on 23 editorial boards. Eight panelists had taught at least one graduatelevel course in research methodology or analyses, most had conducted invited workshops on methodology and analysis, and several had received research awards from ACA or ACA divisions specifically for their research. One of the panelists had also received a graduate degree in educational research and measurement in addition to a degree in counseling.

A majority of the sample was female (n = 9, 60%) and White/Caucasian (n = 12, 80%), with two self-reporting as Black/African American and one as Hispanic/Latino(a). All 15 indicated that counselor educator was their main role; one (7%) also reported that practicing counselor and four (27%) reported that supervisor were additional roles. The average age of panelists was 42.08 years (SD = 6.22; range = 32–52 years; two panelists did not provide their age). There is no power analysis in the Delphi method; instead, representativeness of the results is based on the quality of the expert panel rather than on its size (Powell, 2003).

Data Collection and Analysis

The Delphi method typically has four distinct phases (Linstone & Turoff, 2002), but it has the flexibility to have between three to five phases (Fletcher-Johnston et al., 2011). Phase 1 involves exploration of the topic and allows for each panelist to contribute information that he or she believes is important in answering the questions that are posed. In the current study, panelists were given a definition of competency (i.e., "the quality of being adequately or well qualified to complete a task; meeting specific qualifications to perform; implicit knowledge of a specific area; and skills, things that one does or has acquired through work or life experience or training"), which was a compilation of various definitions found in dictionaries and journal articles, and were asked to provide their thoughts and opinions in response to open-ended questions in this phase. The questions included the following: "What makes one a 'well-qualified' researcher?" "What research knowledge and skills should counseling professionals

have?" "Should knowledge be specific or in-depth?" "What knowledge should counseling professionals have about quantitative and qualitative analysis?" "What do you believe is lacking in counseling research?" "What competencies do you believe are required at each stage of the research process?" Content analysis was used to analyze Phase 1 open-ended responses. This is the analysis process most commonly used to analyze Phase 1 data (Fletcher-Johnston et al., 2011; Powell, 2003) and is a process by which text data are analyzed and coded into categories or identified themes (Krippendorff, 2013). We individually analyzed the panelists' responses and came to consensus regarding an initial list of items that was to be used in Phase 2.

Phase 2 is used to determine areas of panelists' agreement and disagreement; the goal of this phase is to achieve consensus on the items derived from Phase 1 (Dawson & Brucker, 2001). Specifically, in this study, panelists were provided the items derived from Phase 1 (exploration) and asked to rate them on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Panelists were also asked to give the rationale for their scoring or ranking of items on the Likert scale. In Phase 2, panelists could also make comments about the items, edit items, or add new items that they believed were missing from the initial list that was provided. To analyze the ranking and rating of items in Phase 2, we used the median score and interquartile range (IQR). Although there is no single agreed-upon method for determining consensus (Powell, 2003), using the median and the IQR (Doughty, 2009) is common. Typically, the median is used because it is a measure of central tendency, denoting a middle point on a frequency distribution, and it does not allow an outlying score or opinion to skew the final score. The median is appropriate to use with small groups (Gall et al., as cited in Doughty, 2009) and to minimize skewed distributions (Gravetter & Wallnau, 1996). In the current study, a median of 6 or higher on the 7-point Likert scale was used as the cutoff to determine whether the panelists agreed that an item was a research competency. The IQR identifies the level of consensus within a distribution of scores, representing the middle half of responses (Doughty, 2009; Gravetter & Wallnau, 1996). A smaller IQR indicates a higher degree of consensus. Consensus was defined a priori (before data collection for Phase 2) for the current study as an IQR of 1.00 or less, which is consistent with these recommendations.

Phase 3 and any additional phases are provided for panelists to rerate items that lacked consensus in Phase 2 (Dawson & Brucker, 2001; Fletcher-Johnston et al., 2011). In this study, panelists were asked to respond to any items that were changed or added by panelists during Phase 2, as well as items on which panelists did not agree (per the median score and IQR).

In Phase 4, the final phase in the current study, panelists were provided with the final items for the study. No changes or edits were made on these items from Phase 3; instead, panelists were given one more opportunity to see one another's opinions or ratings to determine whether their opinions changed.

Procedure

Panelists were contacted via e-mail to determine whether they would be willing to participate in the study. All four phases were conducted through an online survey website, Qualtrics, which allowed for individual responses and anonymity of responses. Panelists were first sent an e-mail, which included an informed consent form and an outline of the procedure for the study (i.e., multiple phases). All 15 panelists provided consent. Panelists received an e-mail for each phase with a web link to the online survey, a summary of their responses and scores, and an aggregate summary of scores and comments from other panelists.

In Phase 1, 10 panelists responded (67% response rate); 12 panelists responded for each of the remaining three phases (80% response rate in each round). Nine individuals (60%) responded to all four phases of data collection, two participated in three of the four phases, two participated in two phases, one individual participated in only one phase, and one individual did not respond in any phase.

Results

During Phase 1, 161 initial items were created from the content analysis of panelists' responses to open-ended questions. An example of an open-ended response is the following: "Broad-based knowledge is essential to be an 'educated' researcher. Likewise, researchers will develop 'best fit' personal preferences for pursuing certain lines of inquiry or answering multiple or specific questions." Another panelist indicated, "A well-qualified researcher would be someone who has had training in basic and advanced design and statistical methodologies and who has been conducting independent research for at least 5 years. . . . Although I myself am not a qualitative researcher, I believe someone who is well-qualified also must have expert knowledge in qualitative methods." Another indicated, "The [research] question drives the study and is the basis from which one analyzes data. When there are no questions, I am left wondering what the researchers wanted to find out. The proper execution of data analyses also has been a problem as well as applying findings to clinical practice; that is, how does this research inform counseling, teaching, etc.?" After our initial independent review of all open-ended responses, we conducted content analyses and arrived at consensus for 159 items.

In Phase 2, panelists ranked the 161 items on a 7-point Likert scale, indicating the degree to which they agreed that the item was necessary for a counseling researcher to be competent in producing quality research. Panelists came to consensus on 118 items (73% of the items). Of these 118 items, they determined that 116 items were necessary for counseling research competence and that two items were not necessary for such competence (i.e., $Mdn < 6.00$, $IQR \leq 1.00$). These two items, "Has general knowledge of counseling theories and/or interventions" and "Is able to build relationships with other researchers," were dropped and were not included in Phases 3 and 4. Example items on which panelists reached consensus in Phase 2 are "Understands the importance of grounding a research idea in a theoretical basis and/or conceptual model" ($M = 6.33$, $Mdn = 6.00$, $IQR = 1.00$), "Develops a research question that is meaningful to the profession" ($M = 6.42$, $Mdn = 6.00$, $IQR = 1.00$), and "Follows the appropriate methodology based on the research question, rather than selecting a methodology solely because of its simplicity" ($M = 6.58$, $Mdn = 7.00$, $IQR = 1.00$). Consensus was not reached on 19 of the 161 items ($IQR > 1.00$), thus requiring these items to be rerated in Phase 3. Although consensus was achieved on the majority of items in Phase 2, panelists' comments revealed that they believed that some items were too specific or redundant (e.g., separate items for knowledge of "descriptive designs," "single-subject designs," and "correlational designs") and recommended that these items should be combined in more general items (e.g., "Has general knowledge of the breadth of quantitative designs available [e.g., descriptive, clinical trials, experimental, process]"). Thus, 24 items were dropped and 29 items were added for Phase 3.

Panelists were provided a total of 48 items for Phase 3 (newly added items plus items for which consensus was not reached in Phase 2). Of these, panelists reached consensus on 39 items; they agreed that 38 were necessary for competence (i.e., $Mdn = 6.00$, $IQR = 1.00$), and they

deemed one as unnecessary. The dropped item was "Has knowledge of existing larger data sets (e.g., NELS)" (M = 4.92, Mdn = 5.00, IQR = 0.00).

At the completion of all four phases, panelists (a) agreed that 160 of the items originating out of Phases 1 and 2 were necessary research competencies, (b) agreed that four items were not necessary, and (c) did not reach consensus on two items. Two items were combined because, although panelists agreed that they were necessary, they were duplicate items. The duplicate items were "Demonstrates cultural competence throughout the research process" and "Is culturally competent in all aspects of research." The items were then categorized to provide a meaningful framework for presenting the 159 competencies. On the basis of the definition of competencies (Rodolfa et al., 2005), each competency first was labeled as either knowledge-based (i.e., what counselors should know), skill-based (i.e., what counselors should be able to do), or an attitude/attribute (i.e., a personality characteristic or an outlook or stance that one takes). Second, we reviewed other research competency lists (e.g., AAHB, 2005; Peterson et al., 2010) to identify similarities or differences that would provide potential category labels. This process resulted in six competency domains and six competency components. A summary of these domains and components follows. (See Table 1 for all consensus items, which are arranged by domains and components.)

Informed and Critical Thinking

This competency domain entails locating, evaluating, and integrating literature and research and emphasizes the importance of developing a meaningful research question. This domain includes three components: have knowledge of the field, think theoretically and critically, and frame significant research questions. The first component (have knowledge of the field) requires counselors to understand trends in the field of counseling as well as other relevant disciplines, know how to find relevant literature, and acquire in-depth knowledge of the specific topic to be studied.

The second component (think theoretically and critically) involves having knowledge of and grounding research ideas in existing theoretical models and conceptual frameworks, as well as critiquing the frameworks and existing literature. This component stresses the importance of being a deductive and inductive thinker in critically examining existing knowledge.

The third component (frame significant research questions) involves the ability to develop research questions that are meaningful to the profession and to ground research questions in the literature. Objectivity, or minimizing one's biases, is emphasized in this component.

Steps in the Research Process

This competency domain includes the ability to design, implement, and interpret research; provide results in a way that is accessible and understandable to others; and eliminate bias in the research process. This domain is made up of three components. The first component, identify appropriate methods of inquiry, involves the recognition that multiple research designs are available and can contribute essential knowledge to the counseling field. Methodological selections are not based on preference (e.g., "I am a quantitative [or qualitative] researcher," "I like to use the Smith Self-Efficacy Scale"), but rather on the appropriateness of a methodology. Thus, this component stresses having knowledge of the breadth of methods, including research

designs, procedural methods, and sampling procedures, while having more in-depth knowledge and skills of the methods and procedures selected for a specific study.

The second component, collect and analyze data, requires a breadth of knowledge of data collection methods, with indepth knowledge and skill in the analysis selected for a study. This component also stresses the connection between the analysis technique, research question, and research design.

The third component, communicate research findings, includes the ability to integrate a large amount of literature into a clear, concise, and logical argument that leads to the research question. Included in this component is the ability to interpret the results appropriately and to succinctly share the results in a manner that is understandable and accessible by a variety of audiences (e.g., other researchers, practitioners).

Ethical and Professional Competence

This competency domain requires knowledge of relevant professional ethical codes and the ability to solve ethical problems that arise during the research process. This domain also requires the counselor to understand his or her limitations as a researcher, which may include competency level and awareness of when more information or training is necessary

Breadth and Appreciation

The expert panel agreed on several items that described a broad view of the research process. This competency domain indicates that competent counseling researchers need to have knowledge and skill of the entire research process, from idea inception to dissemination. In this domain, it is important for the researcher to have an appreciation of research and the fortitude to persevere in the work.

Relational Aspects

This competency domain stresses that researchers need to be collaborative and build relationships within their research teams and with individuals in the surrounding community. Researchers' counseling skills are relevant to these effort.

Continual Education

This competency domain is focused on counselors' need to engage in continuing education in research and to accept and seek feedback and consultation regarding their work.

Discussion

The aim of this study was to engage in a first step toward developing research competencies for the field of counseling, using an empirical approach of reaching consensus with an expert panel. Several recurring themes were prominent across the counseling research competency domains. First, both breadth and depth of research knowledge and skills are emphasized, but in different ways. The expert panel seemed to agree that competency requires both knowing about available options and being aware of the range of possibilities. Breadth was emphasized in competencies

such as knowledge of the trends inside and outside of the field, research methodologies and designs, data collection methods, sampling procedures, and analysis techniques. However, the expert panel stressed having (or gaining) more detailed knowledge in the methods and techniques selected to solve a particular problem. This theme seems relevant to one of the items that the panel conceded was not necessary, that is, skill at implementing advanced statistical analyses. The panel agreed that although knowledge of statistics is important (i.e., breadth), in-depth skill for all researchers was important only when advanced statistics were being used in the study. Although breadth of knowledge allows the ability to ask questions that are driven by the literature (e.g., the current state of the knowledge may suggest testing a model of variables known to be relevant vs. identifying the relevant variables) and select methodologies and procedures that will answer the research question (e.g., see Richardson, 2006), specific knowledge and skill allow a researcher to conduct a study with the utmost precision, care, and validity. Breadth of knowledge also increases the possible options one may have in conducting a study. For example, if a researcher knows only one type of sampling, it is likely that this will be the method the researcher will use in each study, even if the method is not appropriate to the research question.

A second theme in the competencies was the relationship among the steps of the research process. Specifically, a researcher's knowledge of the trends in the field and the breadth of literature on a particular topic leads to a research question (e.g., Boote & Beile, 2005); the methodology selected is dependent on the type of question that is asked (e.g., Greener, 2011); and the data analysis is dependent on the methodology selected, the data collection tools, and the actual data (Trusty, 2011). Thus, as suggested by the expert panel, no aspect of the research process can be conducted in isolation, although a well-informed research question seems to be pivotal.

A third theme was an emphasis on objectivity and limiting researcher bias. It is important to note that the expert panel emphasized this theme across the research process and competency domains, and not only for qualitative research, where managing bias is a frequent emphasis. For example, the expert panel advised addressing bias in writing the research question, selecting the methodology, and collecting and analyzing data.

Finally, through the items that were deemed to be necessary, the expert panel suggested that a competent researcher seeks to provide and produce research findings that are applicable to the field. This theme points directly to competencies that could help bridge the researcher–practitioner gap, including competencies that are related to social validity and readability of results. First, conducting research that is applicable includes asking questions that are socially valid. Two items address this: "Is able to evaluate the quality of a research idea (e.g., the relevance to the field)" and "Develops a research question that is meaningful to the profession" (see Table 1, Frame Significant Research Questions). Wester (2011) indicated that one step in publishing ethical research is to conduct studies that are meaningful and socially valid to the profession, particularly studies that will affect clients, students, educators, counselors, or the general public. Similarly, Hostetler (2005) stated, "Good research is a matter not only of sound procedures but also of beneficial aims and results. Our ultimate aim as researchers and practitioners is to serve people's well-being" (p. 17). Some counseling professionals have suggested that the majority of research questions being asked in counseling research are currently not relevant to counseling practitioners and their clients (e.g., Kaplan, 2009; Mobley & Wester, 2007).

TABLE 1

Medians and Interquartile Ranges (IQRs) of Items From Phases 2–4

Category	Domain, Component, and Item	*Mdn*	IQR
	Informed and Critical Thinking		
	Have knowledge of the field		
Knowledge	Understands the value of research to the field	6.50	1.00
	Understands and can apply trends in the field, and across disciplines, to create or envision the next steps in a research domain	6.00	0.75
	Understands where to find relevant literature and resources	7.00	1.00
Skills	Masters extant literature relevant to the domain of study	7.00	1.00
	Demonstrates cultural competence throughout the research process	7.00	1.00
	Think theoretically and critically		
Knowledge	Understands the importance of grounding a research idea in a theoretical basis and/or conceptual model	6.00	1.00
	Has knowledge of various theories and/or conceptual models that can provide a framework for a research idea	6.00	1.00
Skills	Grounds ideas in the existing literature	6.00	1.00
	Critiques literature beyond author-acknowledged statements	7.00	1.00
	Critically integrates existing relevant literature to determine an important and meaningful gap in the research	7.00	1.00
	Uses existing research as a foundation for the study	6.00	1.00
	Deconstructs and critiques theories and/or conceptual frameworks for possible alternative explanations or missing factors	6.00	1.00
	Builds a conceptual framework when a relevant one does not exist	6.00	1.00
	Integrates results from multiple sources (e.g., literature, articles, presentations, data) in creating a rationale for a study	6.50	1.00
	Condenses large amounts of literature into a succinct, cohesive argument	7.00	0.75
	Determines which literature is relevant to include for the present study	7.00	1.00
	Recognizes limitations and implications of existing studies	7.00	1.00
Attitudes/attributes	Can think inductively	6.00	1.00
	Can think deductively	6.00	1.00
	Is a critical thinker	7.00	1.00
	Frame significant research questions		
Knowledge	Understands the key pieces in developing an argument to study a particular idea	6.50	1.00
	Understands that research questions arise from gaps in existing literature	6.50	1.00
	Understands the differences between quantitative and qualitative questions	7.00	1.00
Skills	Connects the existing literature to the research question	7.00	1.00
	Writes a clear and concise research question	7.00	1.00
	Is able to conceptualize an idea that is socially valid and meaningful to the profession	6.00	1.00
	Is able to evaluate the quality of a research idea (e.g., the relevance to the field)	6.50	1.00
	Develops a research question that is meaningful to the profession	6.00	1.00
	Aligns the research question to the problem statement	7.00	1.00
	Translates a theory into a researchable research question	6.00	1.00
Attitudes/attributes	Is able to minimize one's own bias in writing the research question	7.00	1.00
	Steps in the Research Process		
	Identify appropriate methods of inquiry		
Knowledge	Understands that the methodology section is grounded in the research question	7.00	0.75
	Has knowledge of the extent to which a particular methodology can generalize to a larger population	7.00	0.75
	Understands research theoretical paradigms	6.00	1.00
	Has knowledge of the strengths and limitations of qualitative research designs	6.00	1.00
	Understands how to apply various research designs	6.00	1.00
	Has knowledge of instrument development	6.00	0.00
	Has knowledge of how to conduct a program evaluation	6.00	1.00
	Has in-depth knowledge of the selected methodology for a particular study that one is conducting	6.50	1.00
	Understands the philosophical differences among qualitative designs	6.00	1.00
	Understands the different purposes of qualitative and quantitative methodologies and designs	7.00	0.75
	Has general knowledge of the breadth of quantitative designs available (e.g., descriptive, clinical trials, experimental, process)	7.00	1.00
	Has general knowledge of the breadth of qualitative designs available (e.g., phenomenology, grounded theory, narrative analysis, ethnography)	7.00	1.00
	Has breadth of knowledge related to the different designs and procedures (e.g., longitudinal designs) that can be incorporated into one's study	6.00	1.00
	Has knowledge of multiple types of probability sampling procedures (e.g., random, systematic, stratified)	6.00	1.00
	Has knowledge of multiple types of nonprobability sampling procedures (e.g., convenience, quota, snowball)	6.00	1.00
	Understands sampling procedures that lead to or increase generalizability	7.00	1.00

(Continued)

TABLE 1 (*Continued*)

Medians and Interquartile Ranges (IQRs) of Items From Phases 2–4

Category	Domain, Component, and Item	*Mdn*	IQR
	Steps in the Research Process (*Continued*)		
	Identify appropriate methods of inquiry (*Continued*)		
Knowledge (*Continued*)	Has an in-depth understanding of how to execute the sampling method for a selected study	7.00	1.00
	Understands the effect that sampling has on the ability to find significant results in a quantitative design	7.00	1.00
	Has knowledge of a wide variety of data collection methods (e.g., observational, online, survey, field-based)	6.50	1.00
	Understands the psychometrics of instrumentation	7.00	1.00
	Understands the connection between data collection techniques and research methodology	6.50	1.00
	Has knowledge of strengths and limitations of quantitative designs	6.00	1.00
	Understands how sampling is connected to the methodology section	6.00	1.00
Skills	Identifies a method that best matches the research question	7.00	0.75
	Implements and executes a selected methodology	7.00	1.00
	Appropriately executes various quantitative research designs	6.00	1.00
	Appropriately engages in a variety of qualitative research designs/traditions	6.00	0.75
	Identifies the threats to internal validity in a quantitative design	7.00	1.00
	Identifies the threats to external validity (or generalizability) in a quantitative research design	6.50	1.00
	Identifies the threats to trustworthiness and confirmability in qualitative designs	6.00	1.00
	Alters a study to minimize threats to trustworthiness and confirmability (e.g., triangulation, bracketing, auditor) in qualitative research	6.00	1.00
	Uses appropriate sampling procedures	6.50	1.00
	Selects a sample that is representative for the research questions being asked	7.00	1.00
	Increases sample representativeness	6.00	1.00
	Identifies needed characteristics of a sample	6.00	0.75
	Determines the population that one is attempting to generalize to or gain data from	6.00	1.00
	Determines a sampling frame from the population	6.00	1.00
	Selects a sample that provides adequate power in a quantitative design	7.00	1.00
	Implements random selection	6.00	1.00
	Implements purposeful sampling	7.00	1.00
	Determines whether probability or nonprobability sampling is needed	6.00	0.75
	Implements criterion sampling	6.00	1.00
	Uses sampling methods other than convenience sampling	6.50	1.00
	Identifies the appropriate procedures for participant selection in various qualitative designs	6.00	1.00
	Recognizes when saturation (in sampling) has been reached (when saturation is appropriate to the research design)	6.00	1.00
	Implements controls for extraneous variables where appropriate	6.50	1.00
	Alters a study to control for threats to validity in a quantitative design	6.50	1.00
Attitudes/attributes	Follows the appropriate methodology based on the research question, rather than selecting a methodology solely because of its simplicity	7.00	1.00
	Has respect for both quantitative and qualitative methodologies	6.00	1.00
	Is willing to step outside one's comfort zone (e.g., use different methods, procedures, or analytical processes)	6.00	0.75
	Collect and analyze data		
Knowledge	Understands the methods and procedures that are involved in various methods of naturalistic inquiry or field-based research	6.00	1.00
	Understands when it is necessary to define themes and/or develop a codebook	6.00	0.00
	Has knowledge of how to gain access to and use personal documents for data collection (e.g., participant journals, photographs, artwork, portfolios)	6.00	1.00
	Understands that data analysis is tied to the research question	7.00	0.75
	Understands that data analysis is grounded in the data collection	7.00	1.00
	Has knowledge of basic statistical analyses (e.g., correlations, regressions, *t* tests)	7.00	0.75
	Has knowledge of advanced statistical analyses (e.g., HLM, SEM, Rasch modeling)	6.00	0.75
	Understands the limitations and/or assumptions of analysis procedures	7.00	1.00
	Understands how to work with covariates in data analysis	6.00	1.00
	Understands the importance of interrater reliability	6.00	1.00
	Understands that data analysis is connected to the research methods used in the study	7.00	0.00
	Understands the importance of bracketing in qualitative designs	6.00	1.00
	Understands how to interpret a statistical output	7.00	1.00
	Understands the difference between statistical and practical significance	7.00	1.00
Skills	Evaluates the psychometrics of instrumentation	7.00	1.00
	Discerns the limitations of an instrument	7.00	1.00
	Conducts individual interviews and focus groups effectively	6.00	1.00
	Collects data using observational procedures	6.00	1.00
	Operationalizes selected variables in quantitative designs	7.00	0.00
	Incorporates and appropriately uses field notes	6.00	0.75
	Determines the best method to triangulate data in qualitative designs	6.50	1.00

(Continued)

TABLE 1 (*Continued*)

Medians and Interquartile Ranges (IQRs) of Items From Phases 2–4

Category	Domain, Component, and Item	*Mdn*	IQR
	Steps in the Research Process (*Continued*)		
	Collect and analyze data (*Continued*)		
Skills (*Continued*)	Appropriately implements data analysis procedures given the available data	7.00	1.00
	Calculates effect sizes	7.00	1.00
	Uses software to analyze data	7.00	1.00
	Demonstrates the internal validity of outcome and/or efficacy research	6.00	1.00
	Implements basic statistical analysis (e.g., correlations, descriptive, *t* tests, ANOVA)	7.00	0.00
	Codes qualitative data appropriate to the methodology selected	7.00	1.00
	Analyzes documents and/or historical data	6.00	1.00
	Engages in and uses inductive and deductive analysis appropriately	7.00	1.00
	Demonstrates trustworthiness (e.g., auditor, triangulation, providing participant quotes) in qualitative research	6.50	1.00
	Applies the appropriate measure of interrater reliability	6.00	0.00
	Removes research bias from data collection procedures	7.00	1.00
	Identifies one's own bias prior to and during data collection	7.00	1.00
	Implements procedures that will yield data needed to answer the research question	7.00	1.00
	Communicate research findings		
Knowledge	Knows APA style (or appropriate professional guidelines in writing)	7.00	0.75
Skills	Makes a logical argument through writing	7.00	1.00
	Writes a clear statement of the problem	7.00	1.00
	Focuses on the larger picture, as well as the technical details	7.00	0.75
	Begins with a broad statement and then narrows the focus when writing	6.00	1.00
	Creates a logical flow between the literature review and the research question	7.00	1.00
	Synthesizes the results of the existing literature	7.00	1.00
	Writes the results in a way that is understandable to others	7.00	0.75
	Keeps the results within the limitations of the sample and the methodology selected (i.e., does not overgeneralize)	7.00	0.00
	Draws logical conclusions from the results	7.00	0.75
	Applies the results appropriately given the limitations of the study	7.00	0.00
	Identifies the limitations of the study	7.00	0.75
	Develops implications that are specific to the counseling community	7.00	1.00
	Reports results accurately (e.g., APA style for statistics)	7.00	0.75
	Provides a rich description of qualitative results	6.50	1.00
	Supports results of a qualitative study with raw data	7.00	1.00
	Provides a specific statement, combined with an explanation supported by the data, of whether the hypothesis was supported	7.00	1.00
	Presents qualitative results using graphs, metaphors, models, or other relevant depictions	6.00	1.00
	Relates results and findings back to the original problem	7.00	0.00
	Contextualizes one's findings (e.g., relates the findings to the field, community, individuals outside the study)	7.00	0.00
	In qualitative methodology, is able to relate one's findings to the wider world or community (although does not attempt to generalize)	6.00	1.00
	Ethical and Professional Competence		
Knowledge	Has knowledge of professional ethical codes regarding research	7.00	1.00
	Understands the ethical principles related to human research participants (e.g., beneficence, justice, autonomy)	7.00	1.00
Skills	Identifies ethical dilemmas	7.00	1.00
	Makes appropriate decisions when ethical dilemmas arise during the research process	7.00	0.75
	Finds solutions to ethical situations	6.50	1.00
Attitudes/attributes	Knows one's own limitations as a researcher	7.00	1.00
	Is ethical	7.00	1.00
	Is willing to invest oneself in the reasearch process, not just the research product	7.00	1.00
	Breadth and Appreciation		
Knowledge	Understands the research process from conception to dissemination	7.00	0.75
	Understands the logistics required to conduct the study (e.g., research question development, sample selection)	7.00	0.75
Skills	Demonstrates the ability to consider all aspects of research design and procedures (e.g., question development, survey design, number of times participants are contacted, implementation of treatment)	6.00	1.00
	Demonstrates skills in managing and organizing projects	6.00	1.00
Attitudes/attributes	Has an appreciation of research	6.50	1.00
	Has perseverance	7.00	1.00

(Continued)

TABLE 1 (*Continued*)

Medians and Interquartile Ranges (IQRs) of Items From Phases 2–4

Category	Domain, Component, and Item	*Mdn*	IQR
	Relational Aspects		
Skills	Builds relationships with individuals in the community (e.g., at-large community under study)	6.00	1.00
	Works with a research team (e.g., contributes to the team, organizes tasks, manages the dynamics of group members)	6.00	0.75
	Has competent counseling skills	6.00	1.00
Attitudes/attributes	Is collaborative	6.00	1.00
	Has a curious nature	6.00	1.00
	Continual Education		
Skills	Accepts feedback about research	7.00	0.00
Attitudes/attributes	Is motivated to continue learning	7.00	0.75
	Is engaged in continuing professional development in research	7.00	1.00
	Is willing to seek consultation when needed	7.00	0.00

Note. Using the Delphi method with an expert panel resulted in 159 research competencies organized under six competency domains (informed and critical thinking, steps in the research process, ethical and professional competence, breadth and appreciation, relational aspects, and continual education) and six competency components (have knowledge of the field, think theoretically and critically, frame significant research questions, identify appropriate methods of inquiry, collect and analyze data, and communicate research findings). HLM = hierarchical linear modeling; SEM = structural equation modeling; ANOVA = analysis of variance; APA = American Psychological Association.

One way researchers can achieve social validity is to enter the field and build a relationship with practitioners to determine what questions they need to be addressed and what type of research would be most meaningful to their work with clients. Panelists highlighted this approach in the competency "Builds relationships with individuals in the community (e.g., at-large community under study)" (see Table 1, Relational Aspects). Through conversations with practitioners, researchers can directly address the researcher–practitioner gap.

Second, research results cannot be applicable unless they are readable. Wester (2011) emphasized the ethical responsibility of researchers to communicate findings that are comprehendible, an important competency for trying to bridge the researcher–practitioner gap. As highlighted in the competencies, researchers must communicate their ideas in a way that is readable and understandable to others, including providing an interpretation of results within the limits of the study. Panelists highlighted items that addressed communicating results, including "Writes the results in a way that is understandable to others" and "Contextualizes one's findings (e.g., relates the findings to the field, community, individuals outside the study)" (see Table 1, Communicate Research Findings). These items suggest that if researchers are to conduct research that is meaningful and socially valid to the field, which will inform practice (Sink & Mvududu, 2010), they need to be able to write results so that counselors can immediately see the relevance and application to their clinical work.

Limitations

Several limitations need to be considered. First, the panel in this study included a small number of counseling professionals. Although the number of panelists in the Delphi method is not as important as the expertise and representativeness (Clayton, 1997), this still should be considered a limitation. Although the representativeness of the panel was broad (e.g., counseling focus, methodologies, empirical and methodological output) and all panelists were considered experts by our criteria, the panel consisted primarily of women, and the primary role of all panelists was that of counselor educator. Including practicing clinicians may have provided different results, particularly because the Delphi method relies on panelists' opinions. Although the Delphi technique relies on opinions, it uses an empirical method to determine consensus. Thus, it should be noted that the competencies in this study were determined empirically rather than through

meetings or discussions, as has been done in other professions (i.e., AAHB, 2005; Peterson et al., 2010).

Implications

Results of this study provide a first step in developing research competencies for the field of counseling. The results offer fundamental clusters of knowledge, skills, and attitudes that can be used by counselor educators and counselors in several ways. First, at a broad level, the competency list may suggest professional development needs in the field that various counseling organizations might seek to address (e.g., Association for Counselor Education and Supervision's INFORM preconference workshops). Second, counselor educators can refer to the list in reviewing their current research offerings and determine whether their research training needs to be changed. The competencies can also help educators develop objectives and learning goals as required by CACREP (2009), because the competencies provide specific learning outcomes—knowledge and skills— that can be assessed (cf. Borden & McIlvried, 2010). Of note, the competency list does not indicate how counselor educators should implement the competencies in educating competent researchers (e.g., course sequence, mentoring), which likely would vary by counselor education program or continuing education offering.

The research competencies may seem applicable primarily at the doctoral level, but they are relevant to master'slevel students and clinicians as well. For example, they are applicable to mental health counselors who design treatment plans with clients, school counselors who evaluate the impact of developmental programs, and all counselors who monitor the effectiveness of their services. Although each counselor may not have or need skills in each competency domain, the developmental appropriateness of each of the competencies should be considered (Borden & McIlvried, 2010; Rodolfa et al., 2005). Specifically, the same degree of research knowledge and skill would not be expected at the beginning, middle, and end of a training program, nor should it be expected that master's- and doctoral-level students, practicing counselors, and counselor educators will be developmentally similar. Thus, the application of the competencies to research training for master's and doctoral students as well as postdegree professionals will necessarily and appropriately vary.

For counseling practitioners, it is important to note that research is not void in a clinical setting. The ACA Code of Ethics (ACA, 2014a) indicates that practitioners should continually evaluate their practice to ensure that they are effective with their clients (Standard C.2.d.). This suggests that they should be routinely collecting some form of data to evaluate their practice. Thus, practitioners should be able not only to read and critically apply the research that is published to inform their work with clients, but also to conduct research in their own practice. Specifically, practitioners should be competent in asking meaningful questions (e.g., Is this form of treatment working for this particular client?) and being aware of the types of methodologies and research designs that may answer these questions (e.g., single-subject or case study designs). Although practitioners may not need to be competent or skilled in applying all designs or performing all analyses, they can be competent in "build[ing] relationships with individuals in the community (e.g., at-large community under study)" (see Table 1, Relational Aspects), in this case, researchers who can assist them in evaluating their practice. Building this relationship and asking meaningful questions should not originate from researcher to practitioner only, but can also work in the opposite direction.

In summary, all counseling professionals, at all levels and in all settings, should be able to review the research competencies to determine the developmental appropriateness of the competency and the need within their role as a counselor. Specifically, once counselors determine their current level of research competency, and the area(s) in which they are increasing their competence, they can then engage in continual education (which is a research competency in itself) so that they learn and grow in ways that support their provision and monitoring of the most effective services for their clients.

The research competencies also provide a basis for future research, such as determining which competencies are currently being taught in counseling master's and doctoral programs. Professionals' self-ratings of their competence as well as the specific areas for additional training would be informative. Replications of the study with other panels could shed light on the skills emphasized by academicians versus those emphasized by practitioners and, in the future, reflect developments in research methodologies. Other possible explorations include the relationship of research competence and research self-efficacy and the development of a research identity.

Conclusion

Although research is essential for expanding and strengthening the knowledge base of the profession, the quality of counseling research continues to be an issue (e.g., Black & Helm, 2010; Fong & Malone, 1994; Wester et al., 2013). Our list of research competencies provides a critical first step for enhancing research training and improving research quality in the counseling profession. With the framework suggested by the competencies, such efforts can be more focused, intentional, and accountable.

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